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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/006,175	12/04/2001	Ronald J. Capik	Capik 2-8	2844

26291            7590            06/27/2003

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[REDACTED]  
EXAMINER

WOOD, KEVIN S

ART UNIT	PAPER NUMBER
2874	

DATE MAILED: 06/27/2003

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

<b>Application No.</b> 10/006,175  <b>Examiner</b> Kevin S Wood	<b>Applicant(s)</b> CAPIK ET AL.  <b>Art Unit</b> 2874	
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*-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --*

**Period for Reply**

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

**Status**

- 1) Responsive to communication(s) filed on \_\_\_\_\_.
- 2a) This action is FINAL.      2b) This action is non-final.
- 3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

**Disposition of Claims**

- 4) Claim(s) 1-21 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) Claim(s) \_\_\_\_\_ is/are allowed.
- 6) Claim(s) 1-5,9-11,14 and 17-21 is/are rejected.
- 7) Claim(s) 6-8,12,13,15 and 16 is/are objected to.
- 8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

**Application Papers**

- 9) The specification is objected to by the Examiner.
- 10) The drawing(s) filed on 04 December 2001 is/are: a) accepted or b) objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- 11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.  
If approved, corrected drawings are required in reply to this Office action.
- 12) The oath or declaration is objected to by the Examiner.

**Priority under 35 U.S.C. §§ 119 and 120**

- 13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).  
a) All b) Some \* c) None of:
  1. Certified copies of the priority documents have been received.
  2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.
- 14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).  
a) The translation of the foreign language provisional application has been received.
- 15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

**Attachment(s)**

- 1) Notice of References Cited (PTO-892)
- 2) Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) 3.

- 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.
- 5) Notice of Informal Patent Application (PTO-152)
- 6) Other: *Brian Healey*

## DETAILED ACTION

### *Claim Rejections - 35 USC § 112*

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.
2. Claim 3 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Claim 3 recites the limitation "beam steering parameters" in the second line of the claim. There is insufficient antecedent basis for this limitation in the claim.

### *Claim Rejections - 35 USC § 102*

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. Claims 1, 3-5, 9, 10, 14, 17 and 19-21 are rejected under 35 U.S.C. 102(e) as being anticipated by U.S. Patent No. 6,449,406 to Fan et al.

Referring to claim 1, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses a method of determining optical amplifier failures that includes the steps of: arranging a plurality of light beams according to a parallel configuration; diverting a first portion of the parallel light beams to a first imaging device (1020); propagating a remaining portion of the propagated parallel light beams through a medium; diverting a first portion of the propagated light beams to a second imaging device (1010); and determining the power loss using the data provided by the first and second imaging devices. See Fig. 10 A, along with its respective portion of the specification.

Referring to claim 3, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses that the micromirrors need to be properly aligned in order to avoid optical losses.

Referring to claim 4, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses that the micromirrors are used to reflect the remaining portion of the parallel light beams through the medium. See Fig. 10 A.

Referring to claim 5, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses that the MEMS switching devices are a free space switch. See the figures of the reference.

Referring to claim 9, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses that the imaging devices are arrays of photo detectors. Photodetectors, such as photodiodes, are known in the art to produce an output level

proportional to the excitation level induced by the received optical signal. See the figures of the reference.

Referring to claims 10 and 14, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses a method of determining optical amplifier failures that includes the steps of: imparting a first portion and a remaining portion of a plurality of substantially parallel light beams to, respectively a first imaging device (1020) and an optical device, the optical device providing a propagated plurality of substantially parallel light beams at an output; imparting a first portion of the propagated plurality of substantially parallel light beams to a second imaging device (1010); and determining the power loss using the data provided by the first and second imaging devices. See Fig. 10 A, along with its respective portion of the specification.

Referring to claims 17 and 19-21, Fan et al. discloses all the limitations of the claimed invention. Fan et al. discloses a power monitoring apparatus, comprising: a first imaging device (1020); a steering device; a second imaging device (1010); and the power loss being determined by the data from the first and second imaging devices. See Fig. 10 A, along with its respective portion of the specification.

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 11 and 18 are rejected under 35 U.S.C. 103(a) as being unpatentable over U.S. Patent No. 6,449,406 to Fan et al.

Referring to claims 2, 11 and 18, Fan et al. discloses all the limitations of the claimed invention, except Fan et al. does not appear to disclose that the photodetectors are made of Indium Gallium Arsenide (InGaAs). It is known within the art that InGaAs photodiodes can be used at high wavelengths because their smaller band-gap energies let them respond to less-energetic photons. It would have been obvious to one having ordinary skill in the art at the time the invention was made to utilize photodetectors made of InGaAs within the device disclosed by Fan et al., since InGaAs photodetectors are capable of operating at the longer wavelengths (1000 nm -1700 nm) typically used in modern optical systems.

***Allowable Subject Matter***

7. Claims 6-8, 12, 13, 15 and 16 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.
8. The following is a statement of reasons for the indication of allowable subject matter:

Referring to claim 6, the prior art does not appear to disclose the combination of all the limitations of the claimed method. Specifically, the prior art does not appear to disclose that the steps of determining the optical loss parameter and adapting the beam

steering parameters are iteratively performed until the determined optical loss parameter is less than a threshold level.

Referring to claims 7, 8, 12, 13, 15 and 16, the prior art does not appear to disclose the combination of all the limitations of the claimed invention. The prior art does not disclose that the first and second imaging devices include an imaging surface defined by a plurality of pixels.

9. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent Application Publication 2002/014009 to Yu et al.

U.S. Patent No. 6,064,501 to Roberts et al.

Each of these references discloses an power monitoring system where the a input power is compared to the output power for the purpose of determining the optical losses of the systems.

10. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin S Wood whose telephone number is (703) 605-5296. The examiner can normally be reached on Monday-Thursday (7am - 5:30 pm).

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Rodney B Bovernick can be reached on (703) 308-4819. The fax phone numbers for the organization where this application or proceeding is assigned are (703) 872-9318 for regular communications and (703) 872-9319 for After Final communications.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist whose telephone number is (703) 307-0956.

KSW  
June 19, 2003



Brian Healy  
Primary Examiner